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THE LANGUAGE LABORATORY--WORK SHEET.

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DESIGNED FOR TEACHERS AND ADMINISTRATORS, THIS WORK SHEET PROVIDES GENERAL AND SPECIFIC INFORMATION ABOUT THE PHILOSOPHY, TYPES, AND USES OF LANGUAGE LABORATORIES IN SECONDARY SCHOOL LANGUAGE PROGRAMS. THE FIRST SECTION DISCUSSES THE ADVANTAGES OF USING THE LABORATORY EFFECTIVELY TO REINFORCE AND CONSOLIDATE CLASSROOM LEARNING, AND MENTIONS SOME COMPLETED AND PROJECTED RESEARCH STUDIES THAT PROPOSE TO DEFINE ITS CAPABILITIES. THE SECOND SECTION EXPLAINS THE SPECIFIC ADVANTAGES, EFFECTIVE USE, AND APPROXIMATE COSTS OF LISTEN AND RESPOND, AUDIO-ACTIVE LISTEN AND RESPOND, AND LISTEN-RESPOND-RECORD EQUIPMENT AND INSTALLATION. IN THE THIRD SECTION ARE RECOMMENDATIONS FOR LABORATORY SCHEDULING, PROCEDURES, USE WITH ADVANCED STUDENTS, MAINTENANCE, AND EVALUATION AS WELL AS SUGGESTIONS FOR STUDENT ORIENTATION AND TESTING. A FOURTH SECTION OFFERS AN EXPLANATION OF LANGUAGE LABORATORY COMPONENTS AND PURCHASING. APPENDIXES INCLUDE A BIBLIOGRAPHY OF REFERENCE MATERIALS AND A DIRECTORY OF MANUFACTURERS OF ELECTRONIC CLASSROOM EQUIPMENT. (AB)

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THE LANGUAGE LABORATORY

Work Sheet

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February, 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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I. GENERAL PHILOSOPHY OF THE FOREIGN LANGUAGE LABORATORY

A. Definition

A language laboratory is an installation of electro-mechanical equipment which provides the student with an opportunity to practice the audio-lingual aspects of language learning. There are many types of language laboratories some of which are listed below. We regard the laboratory as an aid to the teacher. This means that the teacher is clearly thought of as the central figure in the classroom. The laboratory is an aid. It is not the central component of teaching. Laboratory materials are designed to supplement classwork selectively. The materials used should not be complete lessons.

B. The Scope of the Laboratory

With the population explosion and demand for more education for more people there is a critical shortage of good teachers everywhere. It is sometimes thought that by providing language laboratories anybody will be able to teach a language and the teacher shortage will be solved. The fact is that language laboratories require better prepared teachers who can put the new equipment and technique to good use as well as conduct a class. Laboratories do not solve the teacher shortage. When used properly they can increase greatly the effectiveness of good teachers whether or not they are native speakers of the target language. But the language laboratory will not replace the teacher in the classroom. How much a foreign language laboratory actually accomplishes

is directly related to the goals of the course. That is, if understanding and speaking a foreign language are basic objectives of the particular course then the laboratory will make a significant contribution. If on the other hand the listening and speaking skills are not among the primary objectives of the program there will be little need to consider the acquisition of such facilities. The local situation should determine the type of laboratory, if any, to be selected. The equipment used in a laboratory is important but not nearly as important as the materials used and the manner in which these materials are used.

Bruce Garder has expressed it well by stating "....that the course must be so planned that the laboratory is used only for what it alone can provide and that the students must profit from this unique activity in order to be able to do the work of the classroom. In this way laboratory work is a substitute for and an improvement over homework and the classroom begins where the laboratory leaves off." This relationship is interlocking and interdependent. As Elton Hocking has said, "Disappointment with the language laboratory can usually be traced to high hopes followed by poor results from using the laboratory as an optional extra. Such an operation might well be called the disintegrated language laboratory."

The early and fumbling laboratory drills sometimes went as far afield as to record vocabulary lists and verb conjugations. A common practice was to record the conventional exercises of the traditional grammar book. Commercial publishers and classroom teachers were equally guilty of recording translation exercises, fill-in exercises and other materials unsuited to the purposes of the language laboratory.

With the development of contrastive studies by descriptive linguists emphasis began to be placed upon points of interference and pattern drills were developed that concentrated on these points of interference. The assumption can be made that similar structures in the foreign language will cause no trouble to the student and may be taken for granted. But those structures that require drilling are those structures which are dissimilar, and the more dissimilar the construction the more it must be practiced. Practice makes perfect but it is understood that the practice itself must be nearly perfect and almost endless.

We can summarize this section by saying that the language laboratory will produce the desired results provided it is used within the limits of its capabilities. The basic purpose of the language laboratory is to provide efficient practice facilities for listening and speaking that will reinforce and consolidate what has been learned in the classroom. The language laboratory will not replace the teacher and is usually more work for the teacher. As far as the kind of equipment is concerned, the important thing to remember is that the type of equipment selected must fit the kind of program in which we expect to use this equipment. For example, in recent years there seems to be a strong trend toward the combination of visual materials with the so called audio-lingual. This means that in the selection of the kind of laboratory which one intends to buy that provisions should be made for the possible development of this type of aid in the future. At the present time it is no longer necessary for the teacher to make as many "home-made" tapes as he formerly did. The quality of materials which is now available commercially is far

superior to what it was a few years ago. At least we have reasonably satisfactory materials for the first and second levels although we still do not have completely satisfactory materials for the third and fourth levels.

As far as research studies are concerned, there is still a great lack of conclusive material on the efficiency of the language laboratory. However, there have been a few notable studies which have been conducted to discover more or less what the laboratory will and will not do. Some of the more important research studies I have mentioned below:

> Sarah W. Lorge of the Bureau of Audiovisual Instruction, Board of Education, New York City - A very important study in the teaching of high school French comparing a laboratory group with a non-laboratory group. Experiments in which the language laboratory was used indicate that laboratory practice has had favorable effects on a number of aspects of student learning. The laboratory group made significantly greater gains than all other groups in speech and in listening comprehension at the fast rate. In the standardized written test a comparison of the undifferentiated laboratory group with the non-laboratory group showed no significant differences. The results of this study appear to indicate that time spent in the laboratory contributes to conventional learning as well as to listening and speaking skills. There is also some indication of the possible effect of language laboratory work on motivation to continue language study.
>
> Some features contributing to successful operation of the laboratory include: the amount of class time regularly devoted to laboratory practice; the type of equipment used; the types of learning exercises performed; the kinds of lesson tapes used -- but most important the attitude and skill of the teacher, trained or retrained, to use the laboratory as auxiliary to his other teaching skills. A complete summary of the Lorge Report is to be found in the November issue of the Modern Language Journal for 1964.
>
> Another important research study was done by George Scherer and Michael Wertheimer at the University of Colorado. This report has been published by McGraw-Hill entitled, "A Psycho-Linguistic Experiment in Foreign Language Teaching". The major

results of the Colorado experiment include the following: In listening the audio-lingual students were far superior to the traditional students at the end of the first year but this difference disappeared by the end of the second year. In speaking the audio-lingual students were far superior at the end of the first year and maintained their superiority throughout the second. In reading the traditional students were better than the audio-lingual students at the end of the first year but the difference disappeared during the second year. In writing the traditional students were better at the end of the first year and maintained their superiority during the second year. Other measures showed the experimental groups to be superior in assimilating the meaning of sentences and in associating German symbols with their meanings. They also had more desirable attitudes toward Germans and the speaking of German.

Long-range studies on the use of language laboratories are being conducted at such universities as Michigan, Indiana and Tulane. The final conclusions should be forthcoming in the next year or so. Preliminary reports already indicate that the laboratory does indeed help the student to learn a foreign language more efficiently. The preliminary results also indicate that students in laboratory classes have a higher retention rate than students in conventional classes and a much greater oral proficiency though sometimes their reading ability is less. One unusual result reported from the Tulane study is that the students transferred to reading, the skills they learned in an initial period of audio-lingual and language laboratory training. For a more complete listing of some of these research studies I recommend the U. S. Office of Education pamphlet, "The Language Laboratory - How Effective Is It?" by Joseph C. Hutchinson.

C. <u>Specific Advantages of the Laboratory if Properly Used</u>

This is taken from the U. S. Office of Education bulletin, "Language Laboratory Facilities" written by Alfred S. Hayes. Please see the appendix. The list is as follows:

1. In a language laboratory all students present can practice aloud simultaneously yet individually. In a class of 30 students, 29 are not idle while one is busy.

2. The teacher is free to focus his attention on the individual student's performance without interrupting the work of the group.

3. Certain language laboratory facilities can provide for differences in learning rates.

4. The language laboratory provides authentic, consistent, untiring models of speech for imitation and drill.

5. The use of headphones gives a sense of isolation, intimate contact with the language, equal clarity of sound to all students and facilitates complete concentration.

6. Recordings provide many native voices. Without such variety it is common for students to be able to understand only the teacher.

7. The language laboratory facilitates testing of each student for listening comprehension. It has generally been impracticable for the unaided teacher to test this skill.

8. Language laboratory facilitates testing of the speaking ability of each student in a class. It has generally been impracticable for the unaided teacher to test this skill.

9. Some teachers for reasons beyond their control do not themselves have sufficient preparation in understanding and speaking the foreign language. The language laboratory provides these teachers with an opportunity to improve their own proficiency.

10. The language laboratory makes it possible to divide the class into teacher-directed and machine-directed groups.

11. Certain language laboratory facilities can enhance the student's potential for evaluating his own performance.

12. Given specially designed instructional materials, the language laboratory can provide technical facilities for efficient self instruction. (full title of the book in the appendix)

II. TYPES OF INSTALLATIONS AND APPROXIMATE COSTS

Perhaps the term language laboratory is not an accurate description of its most elementary forms, some of which are listed below. Perhaps a better term would be the electronic classroom as this would include all kinds. Whether you use the term language laboratory or electronic classroom, most installations can be conveniently divided into three

main types: (a) Listen and Respond (b) Audio-active Listen and Respond (c) Listen, Respond and Record.

A. Listen and Respond

In its very simplest form this group consists of a lesson source: tape recorder, record player, etc., over which recorded lessons are reproduced and students simply listen and repeat. This kind of installation perhaps has some advantages over the teacher's voice alone, however, this is not recommended except for very small groups. We have to say that this kind of installation is better than nothing but not as good as some of the ones mentioned below. A refinement of this system is to provide each student with a headphone (no microphone at this point--only headphones). I have seen classes where one tape recorded provided the lesson source for up to 30 students. To do this sort of thing one usually needs a jack box of some kind or perhaps two jack boxes into which student headphones may be plugged. Remember that this is still a listen and respond situation only but students do not have microphones. This is a very inexpensive kind of electronic classroom and again for groups that are not too large will offer quite an improvement over the tape recorder or record player without earphones. I would say that an installation of this sort should be considered especially in cases where groups are small and money is a serious problem. The cost of this kind of equipment would be restricted to the cost of the tape recorder--anywhere from $150.00 to perhaps $300.00 or record player from $70.00 to $200.00. Jack boxes usually run between $5.00 and $8.00. Sometimes a jack

box can be made by a local electrician or by someone handy with tools and this would also apply to any extra wiring. It is very difficult to give an exact figure on the cost of headphones. Acceptable headphones will run from around $13.50 up to perhaps $30.00. It is strongly recommended that one purchase quality material when purchasing any components of an electronic classroom or language laboratory.

B. Audio-active Listen and Respond

This is a refinement of the simple listening type of electronic classroom. By installing a microphone and an amplifier either at the student position or at a teacher's console and connecting this to the headphones, a student is able to hear not only programs from an outside source but his own voice as well. This is the reason for the term audio-active. This arrangement has the advantage of placing the response of the individual student in the same acoustical perspective as the program material being sent to him. Psychologically and physiologically it permits the student to hear himself much as others hear him. This kind of equipment may be purchased with a teacher's console or sometimes without the teacher's console. It should be remembered that if you do not have a teacher's console then in order to provide the audio-active function, that some kind of amplifier will have to be provided for each student. Some electronic classrooms have small amplifiers attached to the desk and when the laboratory is being used the student merely plugs his headphone into this amplifier and the lessons can continue. Since amplifiers cost between $35.00 and $75.00 I have found that there is very little difference in actual

cost between a group of amplifiers and a teacher's console which provides the same functions in a more acceptable manner. Most of the language laboratories which one finds in the secondary schools are of this second group. Laboratories may be found with individual student booths or simply with installations at tables or in some cases at the student's desk or in a great variety of arrangements.

As far as cost is concerned, if individual student booths are desired the cost will run anywhere from $60.00 to around $200.00. It is sometimes possible if facilities are available to build these student booths in which case the cost would be much less, perhaps from $40.00 to $150.00. Microphones will run from $25.00 to $100.00. The usual cost for a teacher's console with three channels (two tape decks and one record player) will be between $1,000.00 and $2,000.00 depending on the sophistication of the equipment purchased. With the teacher's console it is possible to have most of the important refinements of this kind of language laboratory. For example, an intercommunication unit or as it is called a monitoring unit. The incorporation of this type of unit into the console permits the teacher to monitor any single student without his knowledge and initiate a two-way conversation with the student when necessary or the teacher may speak to all students at the same time.

As far as booths are concerned they have been justified from three standpoints: (1) physical isolation is necessary to encourage independent work (2) psychological isolation reduces anxiety level and (3) the acoustic treatment of the interior walls of the enclosed booth absorbs external sound and creates a student environment in

which extraneous noise is reduced from the level found in the conventional classroom situation.

Two technological developments have rendered full booths far less important than they once were. First, the fully cushioned earphone makes possible a high degree of sound isolation for each student. Headphones of this type reject almost all outside noise and permit much higher levels of concentration than were possible before their introduction. A second innovation, referred to as the "sound canceling" microphone, accepts only sound generated in the immediate area of the instrument, and "cancels" virtually all extraneous sound. With this specialized piece of equipment, the student receives only the sound of his own voice, while the random sounds of the classroom and the responses of other students are effectively curtailed.

Also on the market are various kinds of convertible booths. Furniture which is designed with a folding student partition which may be raised or lowered as desired. In other words, with this kind of equipment it is possible to have a regular classroom and at the same time convert it quickly into a language laboratory with individual booths. With respect to booths, my own recommendation is as follows: With small classes and in situation where space is a serious problem, I recommend the language laboratory with padded headphones but without individual student booths. However, for larger schools with many foreign language classes using the language laboratory, by far the most economical and most satisfactory arrangement will be a full laboratory in a separate room with

individual booths for each student. Any such laboratories being constructed should take into consideration the possible emergence of great quantities of visual materials. Therefore, in the construction of these laboratories allowance should be made for the use of projection screens and it is very important that the booths be placed in such a manner that any of this visual material would be available to all the students who might be using the language laboratory. This would preclude such arrangements as a back-to-back installation or a facing-the-wall kind of installation where it would not be possible for the student to see a projection screen from his position.

Generally speaking, in a 25 or 30 station laboratory it is recommended that there be at least three sources of program material. Two tape decks perhaps and one record playing device is a usual arrangement which seems to be very satisfactory. There is no great advantage to having more than two tape decks, or three at the very most, as it is hardly possible for one teacher to manage any more at one time and laboratory assistants are very rare indeed in the secondary schools.

C. Listen, Respond and Record

The addition of recording facilities to the language laboratory is the third method of use which permits a rather different philosophy to be incorporated into the electronic classroom. As the student records both the original program material as well as his responses to it, subsequent replaying permits direct comparison between the response and the original program material. Using the library system which is more common in colleges and universities than in secondary schools this type of equipment makes is possible for an

individual student to make as many recordings as necessary to approximate the model program. However, at the present time there is no clear proof that this type of laboratory is superior to any great degree over the other kinds. Sarah Lorge in her study in the New York City Schools did report that "The recording-playback group achieved significantly greater gains in over-all quality of speech and in listening comprehension in comparison with the audio-active group." Most researchers, however, have found very little significant difference between this kind of laboratory and the simple audio-active form of laboratory. Many believe that the greatest function of the laboratory is simply the listen and respond function.

My own person recommendation is as follows: In a full laboratory of 25 or 30 stations it is desirable to have five or six booths with full recording facilities. I believe that in the secondary schools it is extremely difficult to justify any more than this. Not only because recording facilities are more expensive but also because of the simple fact that the average teacher simply does not have time to manage more than five or six of these full recording booths in the average laboratory. If one were purchasing a laboratory for a college or university where the library type of laboratory is more common then I believe that recording facilities would be more important than they are to the secondary school. We said earlier that the average booth would cost between $60.00 and $200.00 and under normal circumstances, with recording facilities, the same booths will be approximately double in cost.

To summarize my recommendations concerning the type of equipment purchased I feel that except for very small installations that teacher's console is preferable because of the many advantages which it offers and the more important of these advantages is the monitoring facility. It is possible to buy portable consoles of very satisfactory variety such as the ones which were shown at the workshop. These portable consoles have the advantage of being highly adaptable. They can be taken from one classroom to another. With respect to recording facilities, my recommendation is that some recording is desirable but not more than roughly 20 per cent of the total number of booths. As far as the total cost of an "average" language laboratory such as one is apt to find in our secondary schools is concerned, we might say that the average laboratory contains the teacher's console and generally at least three program sources (two tape decks and one record player). Booths were more common in the early laboratories than they are now and especially since the emphasis has been shifting towards the combination of the visual with the audio-lingual. The average 25 or 30 station laboratory with some recording facilities will cost between $6,500.00 and $9,000.00. If a school cannot afford a complete laboratory all at once, it is well to remember that many of the refinements of a laboratory may be spread over a period of some years with only basic equipment being installed at the beginning with the use of National Defense Education Act funds. It is sometimes more logical to do it in this manner.

III. THE USE OF THE LANGUAGE LABORATORY

A. Preparation and Orientation of the Students

Before taking any students into the laboratory the teacher must be sure that the student understands the purpose of the equipment--that it is a drill master and not a fascinating toy. They should know that they are going to be tested on drill work. They should know the laboratory will help them to master the work which is being done in the classroom. The student must be given a purpose for learning whatever may be on the recording. A good practice is to use two or three minutes before each laboratory period to explain the exercise and perhaps to give a preview of the tape drills. What the student hears on the master tape must bear a one-to-one relationship to what is expected of him in the classroom if work in the laboratory is to win his full cooperation. It is easy to prevent vandalism in the laboratory if the student understands what he is doing, what he is supposed to accomplish and if he can feel that he, in fact, has accomplished some of these objectives. It is a good idea to have students sit in assigned seats in a laboratory and have a quick laboratory check of equipment at the beginning of each session. This will avoid any possibility of vandalism and make it a very simple matter to catch the culprit whenever it does occur.

B. Scheduling the Laboratory

According to the available research the most ideal laboratory schedule in high school would be about 15 minutes of concentrated drills every day. In the junior high school this would be perhaps 10 or 12 minutes. But in any case, at no time should the

student be required to use the equipment more than 20 or 25 minutes. It is felt by many that fewer than three laboratory sessions per week is almost totally useless. In the Sarah Lorge study it was shown that students who had received only one period of laboratory instruction per week did worse than students who had received no laboratory instruction at all. However, from twice a week on up there was indication that the contribution of the laboratory was very great. The laboratory should be open during some unscheduled periods or perhaps after school, not only for make-up work but also for those students who desire to do extra practice or to work on special projects. If the time situation is difficult for the teacher, it is a simple matter to train one or two students to work as laboratory assistants. Some schools offer these students one-half credit per semester for this kind of work, just as students receive credit that work in the various offices of the average high school.

C. Good Laboratory Procedures

The teacher should make a special effort to avoid monotony and student boredom in the laboratory. Each student should be actively involved and challenged during machine drill sessions. The first time boredom or fatigue is detected the activity should be changed. Many teachers find spots like these the perfect places for the introduction of music and songs related to the foreign language. Some repetition and pattern drill exercises cause fatigue very quickly, consequently these exercises should not be used more than a few minutes at a time. The teacher should not try to operate more program sources than he can handle comfortable and

with skill, otherwise confusion and frustration will hamper both teacher and students. Material which is not fully integrated with classwork or that is too difficult may cause frustration as well as material that is too long, too monotonous or lacking in challenge. Poor audio quality in the recording or in the equipment will also result in unsatisfactory student response. While the student is practicing in the laboratory he should never have available a written or printed text of the laboratory lesson unless this is necessary for some special purpose. If a text is available the student will trust his eyes rather than his ears. When the teacher monitors a student it is usually inadvisable to interrupt a student to make a correction unless this seems very important at a given time. Many schools have prepared forms upon which the teacher may make short notes concerning the progress of each student that is monitored and then the teacher may discuss these points with the students at the end of the lesson in preference to the technique of interrupting the student when the lesson is in progress. With a little experience the teacher soon discovers which of his students require more attention in the class. These students should be monitored more frequently than the students who seem to be progressing satisfactorily.

D. Testing in the Laboratory

For the laboratory to be successful the student must be tested on achievement in the skills he is asked to practice. If, for example, 75 per cent of the time in level one is devoted to the development of the understanding and speaking skills then 75 per cent of the testing should be oral.

Many of the textbooks now on the market provide a regular series of tests which accompany the course. Types of tests should include much more than mere questions and answers. Utterances can be presented for mimickry, commands can be asked for, direct dialogue items can be presented, changes or substitutions can be made in model utterances and oral responses to pictures can be made. Instructions must be clear and should be given including an example before each type of test item is presented. It is difficult to avoid the subjective element in grading speaking tests. One suggestion that will help to minimize variables is to grade on one element at a time. For example, pronunciation, then perhaps fluency or grammatical structure. Usually when testing in the laboratory it is convenient for the teacher to use a rating scale from one to five or from one to three or some arrangement of this sort. Using a system of this kind enables the teacher to summarize these scores at the end of a month, period or semester and thus arrive at a specific grade for his students in terms of oral proficiency.

E. <u>The Use of the Laboratory in Advanced Classes</u>

The principal advantage of the foreign language laboratory in this area is in the field of cultural material, great varieties of which can be presented to the student in the form of recorded material of one kind or another. Another possibility is the use of material copied from an inexpensive short-wave receiver which allows advanced classes to be exposed to all kinds of authentic material which have been copied first hand for the class. In most classes one will find students who either have a short-wave

receiver or have the ability to construct one from an inexpensive kit. Incidentally, this kind of equipment is also eligible under NDEA for school participation.

F. Laboratory Maintenance

The chief source of mechanical difficulties is the tape deck itself. Some specific individual should be designated to be in charge of periodic cleaning of the equipment as may be necessary. In laboratories that are used very heavily during the day it is a good idea to clean the heads at least once each day. This can be done very easily with a solution which is on the market for this purpose. In many cases companies selling laboratory installations will give complete instructions for cleaning and maintenance. Every laboratory should have a head demagnitizer. This should be used whenever fuzziness or extraneous noise is noticed on the tapes. A machine of this kind usually sells for from $5.00 to $8.00. It is also recommended that all laboratories maintain a trouble card or log book showing kinds of difficulties which have been experienced with this laboratory. In this way it is possible for a service-man to anticipate the problems which might prevent the smooth operation of a normal class period. All laboratories should provide some specific space for storage of tape, as the quantity of tapes which most laboratories accumulate increases from one year to another. It is recommended that some simple system of card filing be used to identify and locate quickly all the audio-visual materials which are used in conjunction with the language laboratory.

G. Evaluating the Use of the Laboratory

In order to achieve the most effective results from language laboratory facilities, teachers and administrators will want to have a continuing program of evaluation of the use of the equipment in instruction. Since the results depend more on the methods and materials used in the laboratory than on the equipment, the effectiveness of the laboratory must be considered in relation to the total language program, to the improvement of teaching techniques and teacher performance as well as to student performance. No laboratory equipment, however elaborate, will be a panacea for the ills of poor teaching.

IV. MISCELLANEOUS

A. Components

1. Microphone - There are many kinds of microphones being used in laboratories. Most of them with apparent success. There is a great deal of discussion still going on as to which type of microphone is best suited for purposes of the language laboratory. Recently the argument has seemed to favor the kind of microphone which is attached to the headphone. Early models were quite unsatisfactory but recent models appear to be much more reliable and as a result more laboratories are using this type of microphone. It simply means that if the student turns his head from one side to the other that the microphone goes with him and there is not the loss which one experiences, for example, with a hand-held microphone or with a "goose-neck" attached type of microphone, when the student happens to turn his head away. With

hand-held microphones the big disadvantage is that the student may drop the microphone thus causing damage to the equipment. The attached "goose-neck" type of microphone has the disadvantage of being permanently in place and is not quite as flexible as other kinds although very trouble free.

2. Headphones - With respect to headphones I have two recommendations--good quality and I prefer the padded design as it is more comfortable for the student and successfully blocks out all extraneous noise.

3. Recording - If the laboratory provides recording facilities, the basic rule of thumb to follow is to keep as much material out of the student's booth as possible -- that is, for general purposes it is more desirable to record the student at the teacher's console rather than providing a tape deck in the student's booth as in secondary schools this presents a strong likelihood of accident problems (students breaking equipment, etc.). If you have only four or five booths with this type of recording, then this is not too difficult to manage successfully. Some laboratories provide disc recorders. These are more inexpensive but do not provide quite the fidelity even for the human voice by comparison with the tapes that are normally used.

4. The Record Playing Device - If you have as one of the program sources a record playing device, it is recommended that this device be of the variety that allows the teacher to stop and to restart without having to search for the stopping place which is usually the case in the normal type of record playing machine. Some of these newer models now have a dial by which it is possible

for the teacher to return to an exact spot on the record with no hesitation and no searching.

5. Provisions for Visuals - It is repeated here that in the purchasing of a foreign language laboratory that provisions be made for the strong trend in the industry toward the combination of visual materials with audio materials. In other words, the laboratory should be so constructed that students may have an unobstructed view of a projection screen. It is also recommended that remote control switches be placed at the teacher's console for operating a slide projector or filmstrip projector. This makes it unnecessary for the teacher to go to the back of the room to use slides or other visual material of this type. Many laboratories with booths have glass panels through which the student may look at a screen. However, it is to be remembered that if the laboratory is not an interior room that quite often these glass panels reflect the light making it almost impossible for the student to see a projection screen or even a blackboard.

6. The Position of the Teacher's Desk - It is being argued in some circles that it is better to have the teachers in the back of the room. This is a matter of preference and should be decided in terms of the exact manner in which the laboratory is to be used. It is also recommended that the teacher's console be placed on a higher level than than the rest of the booths so that the teacher may be easily seen and may also see all of his students. This is especially necessary in large installations of 30 booths or more. All language laboratories should be surrounded by acoustical material covering at least half of the walls. This assists greatly in the fidelity of sound reproduction.

B. Laboratory Discipline

All that can be said here is that it is much easier to maintain discipline in the laboratory and to avoid vandalism if students have an assigned seat and if teachers using the laboratory are careful to have an equipment check at the beginning of each laboratory period. This makes it a simple matter to identify any person who may be misusing the equipment or committing any act of vandalism such as is quite likely to take place in many of our secondary schools. Normally the laboratory does not present any greater discipline problem than any other teaching situation and as a matter of fact if the lessons are well planned and interesting it may actually present less of a discipline problem than the regular classroom.

C. Procedures to Follow Before Purchasing a Laboratory

1. Initial meeting of faculty and administrative officials. In this meeting objectives are clearly delineated and the general attitudes of the faculty are carefully analyzed. The people using the laboratory should have an important part in planning for the purchase of this kind of equipment.
2. Consultant Assistance.
3. Accumulation of vendor information. See appendix for list of companies selling foreign language laboratories. They will be glad to provide you with brochures.
4. Visits to schools with electronic classroom facilities.
5. Writing of specifications.
6. Title III office request for approval. This is usually an administrative problem.
7. Advertisement for bids.

8. Installation.
9. Inspection of equipment by a qualified person before final acceptance.
10. Faculty training period in the use of the equipment. Many language laboratory companies provide this type of training as a matter of course for school districts purchasing their equipment.
11. Constant evaluation of the use of the laboratory and of how successful it has been to the foreign language program in general.

Appendix A

Reference Material

Items of particular interest are marked with an asterisk (*).

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Appendix B

Directory of Manufacturers of Electronic Classroom Equipment

Aero Service Corporation
Educational Services Division
210 East Courtland Street
Philadelphia 20, Pa.

American Desk Manufacturing Company
Temple, Tex.

American Seating Company
901 Broadway, N.W.
Grand Rapids, Mich. 49502

Ampex Corporation
Consumer & Educational Products Division
2201 Landmeier Rd.
Elk Grove Village, Ill.

Audio Teaching Center
137 Hamilton St.
New Haven, Conn.

Berlant Automonitor Corporation
8525 Steller Dr.
Culver City, Calif.

Chester Electronic Laboratories
Winthrop Rd.
Chester, Conn.

Cousino Electronics Corporation
1941 Franklin Ave.
Toledo 2, Ohio

Dage-Bell Coporation
(formerly Thompson Ramo Wooldridge, Inc.)
6325 Huntley Rd.
Columbus 24, Ohio

DuKane Coporation
St. Charles, Ill.

Edu-Tronics, Inc.
459 Broadway
Hicksville, N. Y.

Electronic Futures, Inc.
301 State St.
North Haven, Conn.

Electronic Teaching Laboratories
5034 Wisconsin Ave. N. W.
Washington 16, D. C.

Fleetwood Electronics Division
Post Office Box 58
Zeeland, Mich. 49464

General Electric Company
Educational Products Section
212 West Division Street
Syracuse, N. Y.

General Dynamics Electronics
Industrial Products
1400 N. Goodman St.
Rochester, N. Y. 14601

Hamilton Manufacturing Company
Two Rivers, Wisc.

Instructomatic, Inc.
8310 Fenkell Ave.
Detroit 38, Mich.

Robert C. Merchant
Electronic Systems
Post Office Box 594
West Lafayette, Ind. 47906

Radio Corporation of America
Audio-Visual Department
Building 15-5
Camden, N. J.

Rheem Califone Coporation
1020 North La Brea Ave.
Hollywood 38, Calif.

Science Electronics, Inc.
195 Massachusetts Ave.
Cambridge 39, Mass.

Sigma Electric Company, Inc.
11 East 16th St.
New York 3, N. Y.

Switchcraft, Inc.
5555 North Elston Ave.
Chicago, Ill. 60630

Universal Electronics Laboratories
Corp.
510 Hudson St.
Hackensack, N. J.

Viking of Minneapolis, Inc.
9600 Aldrich Avenue South
Minneapolis 20, Minn.

Webster Electric Company
Racine, Wisc.